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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,488	04/17/2001	Mo-Han Fong	12473RMUS02U	8528

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EXAMINER

MCCARTHY, CHRISTOPHER S

ART UNIT PAPER NUMBER

2113

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/836,488	Applicant(s) FONG ET AL.	
	Examiner Christopher S. McCarthy	Art Unit 2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>response to arguments</u> . |

DETAILED ACTION

1. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Suumaki et al. U.S. Patent Application Publication 2001/0007137 A1, as cited in prior office action, which was mailed on 4/8/2004.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Suumaki et al. U.S. Patent Application Publication 2001/0007137 A1.

Referring to claims 1 and 11, the limitation of a method for operating a receiver to receive data from a transmitter across a wireless link, Suumaki et al. (Page 1, section 1) discloses methods of wireless communication between devices in a network. Referring to the limitation of receiving, by a physical layer operating on the receiver, a physical layer frame from the transmitter across the wireless link, Suumaki et al. (Page 1, section 8) discloses the different layers of the protocol used for connections, including a physical layer. Referring to the limitation of determining whether the physical layer frame is error free, Suumaki et al. (Page 2, section 10)

discloses checking the accuracy of the data sent using a checksum. Referring to the limitation when the physical layer frame is error free, acknowledging to the transmitter a successful receipt, extracting a packet data unit from the physical layer frame, and passing the packet data unit to a link layer operating on the receiver, Suumaki et al. (Page 2, section 15) discloses acknowledging a data transfer and transmitting the correct data to the upper layer in order of arrival. Referring to the limitation when the physical layer frame is not error free, negatively acknowledging to the transmitter a successful receipt, Suumaki et al. (Page 2, section 17) discloses notifying the sender that the data was not received properly. Referring to the limitation of receiving, by the link layer operating on the receiver, a packet data unit, Suumaki et al. (Page 2, section 9) discloses use of the link layer to receive the RLC PDU's. Referring to the limitation of determining whether a packet data unit is lost, Suumaki et al. (Page 2, section 17) discloses notifying the sender that the data was not received properly. Referring to the limitation when the packet data unit is lost, delaying an automatic retransmission request for a lost packet data unit for a delay period corresponding to an error recovery operation at the physical layer for the lost packet data unit, Suumaki et al. (Page 3, section 26) discloses waiting until the end of a window of data units to be sent before retransmitting data that was not received during that period.

Referring to claims 2, 7, 12, and 18, the limitation that the delay period corresponds to N retransmission attempts by the physical layers to successfully receive a physical layer frame containing the lost packet data unit, and wherein N is an integer, Suumaki et al. (Page 2, section 10) discloses reaching a maximum number of retransmission attempts before determining that the data cannot be correctly received.

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Referring to claims 3, 4, 8, 9, 15, 16, 20, and 21, the limitation that the transmitter is a base station; and the receiver is a mobile station, or vice versa, Suumaki et al. (Page 1, section 1) discloses a wireless communication device arranged to function in a telecommunication network, either as a transmitter or a receiver, with another communication device that could be wired or wireless.

Referring to claims 5 and 13, the limitation of determining whether a packet data unit is lost includes comparing the sequence number of a received packet data unit to the sequence number of an expected packet data unit, Suumaki et al. (Page 3, sections 26 and 27) discloses receiving data in windows containing data arranged with sequence numbers and using the sequence numbers to determine when data is lost after not receiving all the sequence numbers in a window within a period of time or retransmissions.

Referring to claims 6 and 17, the limitation of a method for operating a transmitter to transmit data to a receiver across a wireless link, Suumaki et al. (Page 1, section 1) discloses methods of wireless communication between devices in a network. Referring to the limitation of passing a packet data unit from a link layer operating on the transmitter to a physical layer operating on the transmitter, Suumaki et al. (Page 1, section 8) discloses a physical layer and a data link layer that communicate to pass data between the layers, including passing a PDU from the link layer to the physical layer. Referring to the limitation of packaging the packet data unit into a physical layer frame, Suumaki et al. (Page 2, section 9) discloses dividing up the PDU'S into suitably sized payload units. Referring to the limitation of transmitting the physical layer frame to a receiver across the wireless link, Suumaki et al. (Page 2, section 10) discloses transmitting the data to another point in the network. Referring to the limitation of awaiting an

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indication of successful receipt of the physical layer frame from the receiver, Suumaki et al. (Page 2, section 10) discloses using acknowledgments to notify the transmitting device that the data was successfully received. Referring to the limitation when an indication of a successful receipt of the physical layer frame is not received, initiating retransmission of the physical layer frame, Suumaki et al. (Page 2, section 10) discloses retransmitting a data unit if an acknowledgment is not received in the allotted period. Referring to the limitation if the indication of successful receipt of the physical layer frame is not received after a predetermined number of retransmission attempts (Sumaaki, paragraph 0010), notifying the link layer that the packet data unit is lost, Suumaki et al. (Page 2, section 17) discloses notifying the data link layer that the data could not be transmitted due to unrecoverable errors within the scope of the given retransmissions and set delay. Referring to the limitation of delaying link layer recovery operations for the lost packet data unit until the link layer determines that plurality of retransmission attempts of the physical layer for the lost packet data unit have been successful (Sumaaki, paragraph 0010). Referring to the limitation of the link layer initiating error recovery operations for the packet data unit that is lost after determining that the plurality of retransmission attempts of the physical layer for the lost packet data unit have been unsuccessful, Suumaki et al. (Page 4, section 42; paragraph 0010) discloses determining that a data unit contains errors and cannot be transmitted, and further detecting the particular segment that contains and error to repair it and teaches the retransmission attempts.

Referring to claims 10, 14, and 19, the limitation that the link layer comprises a radio link protocol layer, Suumaki et al. (Page 1, section 8) discloses a data link layer that contains a radio link control sub-layer.

Response to Arguments

3. Applicant's arguments filed 7/31/2004 have been fully considered but they are not persuasive.

Applicants argue that Sumaaki does not teach all limitations of the present invention, as claimed in claims 1 and 11, in that Sumaaki does not teach wherein the physical layer performs the operations of the present invention and is only concerned with the operations of the link layer. The examiner respectfully disagrees. The claim language of the present invention does not explicitly state wherein all the operations are performed solely by the physical layer without the control of the link layer. By definition, the physical layer is merely a hardware layer for the communication needs of a computer-computer connection and the link layer is a layer that manages the flow of transmissions over the physical layer. Therefore, the data going through the physical layer, i.e. ordering, error checking, etc., is partly, if not fully, controlled by the link layer. To further elaborate, the cooperation of the link layer to the physical layer is inherent in the general protocol stack architecture. Sumaaki may teach the interaction between the sub-layers of the link layer, but this interaction is also inclusive of the physical layer and the data packet frames therefrom. The examiner contends that the lower sub-layer of the link layer is in direct connection with the physical layer and therefore is autonomous with the control of the physical layer.

Furthermore, as amended to claims 6 and 17, even though it is stated that the link layer holds off the recovery process pending the retransmission attempts of the physical layer, the link layer can be and inherently is involved in both the waiting of the recovery process and the

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retransmission attempts as done by the link layer, which is performed through the physical layer, but is controlled via the link layer. The limitation of the delay and retransmission is taught by Sumaaki in paragraphs 0010, and 0028, wherein the error recovery is held off until N transmission attempts are made.

In light of the arguments above involving the architecture of the protocol stack and its inherencies therein, all applicable claims stand rejected.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. McCarthy whose telephone number is (571)272-3651. The examiner can normally be reached on M-F, 9 - 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

csm
November 3, 2004


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